

An account of a Polypus found in the heart of a person that died Epileptical, at Oxon. by W. G. M. B. fellow of Wadham Colledge and of the Royal Society.

SEveral Authors that have been curious to cultivate the *Anatomy of diseas'd Bodies* do so frequently mention *preternatural Concretions* in the heart and blood-vessels especially of persons dead in lingering and *chronical Diseases*, that the present discourse may very well seem *superfluous* to those who are *better* instructed elsewhere. But however, Sir, since you think it worth while to furnish your papers with a thing of this nature, I will not *dispute* the task you have put upon me, and though the *fair Figure* you have bestow'd on the Polypus might *excuse* my farther *description* of the thing it self, yet since it was attended with some *unusual circumstances* not taken notice of by anatomical Writers, which may *conduce* to the determining some doubts and questions concerning the *nature, growth* and *duration* of such *like concretions*, it cannot be ungrateful a little to enlarge our Observations on the Subject: and that it may be done to the *better purpose* it will not be amiss to premise a description of the *person*, in whom the *Polypus* was found, together with the *Symptoms* he labour'd under, as also an account of other *particulars* that occur'd in the *dissection*, that by considering the *Concomitant Irregularities* in the *other parts of his Body*, whose causes are more *apparent*, we may make more *probable Conjectures* concerning the *occasion* and *production* of this strange and anomalous substance in his *Heart*.

Indeed the *person*, whose body was the subject of our Dissection, was a poor labouring man, a meer stranger in the Town, destitute of Relations, and dy'd in the street suddenly, so that there cannot be expected *so par-*

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ticular a Relation of the Symptoms he labour'd under, as I could wish, or the thing requires: but however some things material to our purpose, as far as we could learn from the vulgar, who convers'd with him in his Illness, (for he never consulted a Physician,) were such as these, namely, That he was of a swarthy, lurid Complexion, and (if we may trust the usual outward Medical Signs) of a melancholick temper. The distempers and symptoms, that afflicted him were, Fits of the falling Sickness; An obstinate Quartan Ague of above a years continuance; A deep Jaundies, even to that degree, which is call'd the black, with its constant consequent and universal settled ill habit of Body; A sense of an hard load and pressure at his stomach (meaning perhaps his Breast, or the upper part of the Region of the Liver;) he complain'd much of very great shortness of Breath, being almost constantly apprehensive of choaking; far fetcht, involuntary Sighings, and prodigious palpitations of his Heart were the continued mischiefs, that attended his miserable life a great while before death reliev'd him; he us'd to swoon very often; and at length died according to the judgment of the by-standers in the shivering fit of his Ague, with the Convulsions of an Epilepsy, not without foaming and frothing at his mouth; this is all I could credibly inform my self concerning the poor man while living.

As to what was found in the Carcass, three or four Physicians of us having the fair occasion of a Body in private wholly at our own dispose, (which tho' harraled with so many Diseases yet was not wasted as to its flesh) did chiefly design a muscular Dissection, and so did not direct a very nice particular scrutiny into every part affected, but what was obvious at first sight upon opening the Abdomen and Breast was enough to raise our wonder that the poor fellow could subsist one moment with such Viscera. The Liver upon deep Incisions appear'd bloodless, stuff throughout

throughout like a bag of sand with a *yellow gritty substance*, the *Gall-bladder* also was furnish'd with the like, but of a darker hue. The *Spleen* was very large and of too soft and loose a texture, not much discolour'd. The *Omentum* rotten and *wasted*. The Membrane of the *Stomach* extremely flaccid and *very thin*, appearing black and *mortified*, and upon taking it out within twenty four hours after death (thoty'd at both ends very close) sent forth such an intollerable *stowr rancid sent*, that the strongest *double Aquafortis* (to which it might best be compar'd) could not prove so troublesome and *offensive* to the smell. The *Lungs* were distended to the uttermost with a *purulent froth*. The *Heart* much stretcht beyond its natural magnitude and of a very flat figure; the Veins of the whole Body were of an unusual and extraordinary bigness, especially the *Internal Jugulars* were strain'd to above $\frac{3}{4}$ *Inch diameter*; polypous concretions also were found in the larger veins of the Arms, Legs and other parts, but what most engag'd our attention and wonder was *that which is represented by the 3 Figure*; found in the *right ventricle of the Heart*, and towards its apex or tip *firmly Radicated*, so that no small stress was requir'd for the separation. The part by which it was fixt was nigh an Inch and half diameter when fresh taken out, irregularly rough at the Bottom, *insinuating many Roots into the Lacunæ* or little cavities of the Ventricle, which again by *lesser Fibres* were *fasten'd to the inn r Membrane* of the Heart. The *great Branch B.* which ran out into the right Auricle was nigh two Inches diameter at the largest extreme, and reach'd no farther than the insertion of the *Vena Cava*, and whether the current of the blood dashing continually against it, might hinder the progress of its growth, or what other cause I cannot determine, but this I am certain of, that *nothing of the Polypus* extended farther than the figure makes appear, for upon search we could find *no such Concretion in the Vena Cava*. As for those
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those Branches mark'd (G. G.) tending to the Arms, how far they grew I cannot assert, not knowing whether they were broke off or no, but the Branches H.H.H. H, &c. tending toward the Head (I well remember) could not be *drawn out without some force*, and 'tis very likely they were broke off at the Diverticula or two Round Sinus's where the *Jugulars* enter the Skull; for the like concretions were found in the Vessels of the Brain to which probably these might be adjoyn'd. The substance of the whole was plainly fibrous resembling a Nerve, and *tough while moist* (though upon drying, *brittle*) the colour *white*, and was cloathed with a *thin Coat* including (in that part which fill'd the Right Jugular Vein,) *two little black specks* (h. h.) of Blood (as we suppose) a long while there coagulated: as for other circumstances of the *shape, extent, and largeness* of the Polypus the Reader may recur to the *engraven Figure* drawn very near the full dimensions of the thing it self; what has already been said of *it* together with the Remarques on the *whole* dissection will I hope not be altogether unuseful to discover the *Cause and Nature of these strange Bodys* and to determine a Question much debated among learned Physicians *whether a Polypus is produc't some considerable time before or always immediately after death.*

Those that contend for their *sudden generation after death* among other Reasons of *less moment*, insist much on the argument drawn from the tough skin spreading its self in a short time on *Blood let out* for the cure of Pleurisies, Peripneumonies, Rheumatisms, violent headaches, and in cases of any inward Inflammations; It seems a good consequence, that if *Blood could in a Porringer* can so suddenly acquire a kind of a tough thick Membrane, on its surface; the *same coldness and want of motion after death* might as easily make the same product in the *Vessels* and 'tis to be confest that such like *Concretions* have been discover'd in pleuritical Bodys dissected. Yet however
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on the other side *in answer* it may be urg'd, that the appearance is not *constant in all* dissections of Bodys so affected, and that very frequently nothing like it has occur'd; from whence we have reason to conjecture, the *outward contact of the Air* pressing the surface of the emitted Blood, or some other *external Cause* may have an interest in *forming that skin*, for else why should not the like concretion proceed constantly in the *Blood-vessels*, whence *Air is excluded* as well as when the blood is *expos'd in a Porringer*. But moreover whoever consults the *Practical Anatomy of Bonetus* on the subject, will find that these pituitous Bodys scarce ever offer themselves in dissection of pleuritical persons but where the *Pleurisy was complicated* with some other *long settled* indisposition; so that the *time of their growth* cannot be certainly collected from such *Instances*; Besides when they do chance to appear in a single Pleurisy, they float loose in the mass of Blood without fixing to any part, are of a very lax texture, without any distinguishable Fibres, and like what covers pleuritical Blood in a porringer do rather resemble a stiffer sort of Jelly or Size almost dry'd, than any thing of a tough and fibrous consistence, such as was observ'd in the *Polypus* now describ'd.

Kerkringius in the 73 of his anatomical Observations, *utterly denies* the existence of any such matter in a living Body, and to confirm his Opinion asserts it in his own power, to make such *Concretions* at pleasure by the known Experiment of *Injecting Spirit of Vitriol* into a dogs veins, and observing the quick coagulation so made inters that some *peccant acid* in the blood occasion'd by a disease, may as suddenly produce the same when life is gone.

In answer to this argument it might be urg'd, (what frequent experience has taught us here in *England*, and what *Kerkringius* himself seems to hint by his own expressions in describing the experiment) that this *artificial* Polypus is only a kind of grumous and strongly concreted blood, wholly different as to colour, texture, and firmness.

firmness from that substance which these notes discourse of; but however let us suppose that *Kerkringius* was so *lucky*, as to produce one exactly like a *true Polypus* in all circumstances, yet it argues not that all these concretions must needs be form'd all on a sudden; it gives indeed some light into the nature of their *Cause*, but it does not follow that this cause must always work its effect in an *instant*, but a longer or shorter time will be requir'd, as the cause is *more* or *less* active. In the mean time, I do not deny that strange coagulations have suddenly happen'd, and Anatomy has often made such discoveries in cases of sudden death; yet even these generally are not to be lookt on as products after death, but rather the quick inevitable messengers and immediate forerunners of it; such are those concretions that upon dissection have been found in the heart and blood-vessels of persons kill'd by sudden frights, as also in those that have been quickly dispatcht by an unexpected fit of an *Apoplexy*, a *Cardiacal Syncope*, or a *suffocating Catarrh*; where the coagulative Spirit like lightning strikes through the whole mass of blood, and either *fixes* it and makes it unapt for the generation of fresh Spirits, or else, if a gross similitude may illustrate so abstruse a matter, (like what happens to the invisible steams of Spirit of Salt Armoniac, which will be *condens'd*, grow turbid and visible at the approach of the vapour of Spirit of Salt or Nitre) the animal Spirits themselves are *clouded*, alter'd from their natures, extinguish'd and quite destroy'd by a *mixture* of the foreign preternatural halitus. 'Tis not improbable that by one or both of these methods the *pestilential* Effluvia of an infected Air, the *Arsenical* Exhalation of a damp, and the *nitro-sulphureous* steam (much like the scent of Spirit of Nitre) arising from burning charcoal do often act such *sudden* and fatal Tragedies. For if we reflect on the *membranous* substance of the Lungs, the infinite number of *Vesicles* they are compos'd of,

of, how that in every *assignable* point these vesicles are adorn'd with capillary blood-vessels, so that the point of a needle every where draws blood; if we calculate the *inward Concave* superficies of the Lungs, supposed unfolded and spread out into a plain, which must needs exceed the *outward apparent Convex* above an hundred times, and consequently consider the vast surface of Blood each moment expos'd to the Air: Lastly, if we allow the *In-gress* of the Air into the Blood upon breathing, which scarce any now deny, I say if we reflect on these things, 'tis easie to imagine how suddenly mischievous any *coagulative* poysonous steam may prove, since together with the Air 'twill be diffus'd through all the Blood contain'd in the Lungs at the *very Instant* of Inspiration, and, (whether it be *austere* or acid or both, or what other name Physicians may please to give it) joyns it self *per minima* with almost each particle of Blood, and (as steams of hot lead (they say) fix Quicksilver into a solid) presently destroys all *Fluidity*, stuffs the Lungs and Heart with an *immoveable* and almost mortifi'd Mass; puts a final stop to the Circulation, and so in a moment breaks off the Series and Thred of Life.

The *Concretions* that have such surprizing events we must allow to be *suddenly* produc't; and we may ascribe all perhaps to the exceeding *briskness* and activity of the *acid*, or what other quality gave their origine, but nevertheless in the case of *lingring Diseases*, I think it will be no hard matter to prove, (not to contend that they differ from those already mention'd) that at least they make a slower progress in their growth as proceeding from a less active cause, and considering the nature and consistence of the bodies themselves, the Diseases and Symptoms that usually accompany them, and the circumstances of those Dissections that have discover'd them, they must needs appear a *work* of time, and by a *daily* apposition of *new* parts swell into that *strange Bulk* and *shape* they sometimes obtain.

What *Consistence* these Bodies sometimes acquire, this above describ'd is a very instructive instance. The close fibrous texture, the tough Membrane that cover'd it, and the two black hard specks therein included, its strong adhesion to the heart by little capillary Roots and other larger protuberances adapted to all the little cavities of the Ventricle, are *arguments* that it was no small time in growing: and if it happen'd after death, how came it to pass that the large branch *B.* should *stop* within the Auricle, and that nothing of the *like substance* should be *continued* farther into the *Vena Cava*, since the Blood there must needs be as much dispos'd to such a sudden coagulation as in the heart; but it will be easie to account for this circumstance if we lay the first Rudiments in the heart, allow them to *grow* by a *daily* apposition of fresh parts, and that growth constantly to be *circumscrib'd* by the Appulse of Blood, or by the action and *labour* of the Auricle, wherein this branch so oddly shap'd was contain'd. Lastly, if to these remarques we add the Instance *Malpighius* gives of a Polypus made *hollow* by the current of the Blood, like another new blood-vessel fram'd with the natural one; If also we add another round one *Borellus* speaks of, bigger than a mans fist, found in the *Aorta* near the heart, consisting of a great many membranes lying unconnect one upon another, like the leaves of a Cabbage, (*a product (without doubt) of no small time*) we need go no farther than the *bare accidents* of these odd *bodies themselves* to prove their long continuance before death.

At least what usually offers in *dissecting* bodies thus affected, *so demonstrates* the thing, as to leave no place for doubt, and not to heap up Quotations and many Histories of what others have found, the *present* subject (I think) brings evidence enough in the point. For here we have the Jugular Veins (whose coat could not have been much stretch'd *on a sudden*, even by the wind of a Smith's Bellows) *in tract of time*, enlarg'd only by the gentle assiduous

duous pressings of the blood, to *thrice* their former diameter, that is, *nine times* their natural cavity. Here we have a heart, (*the strongest and firmest Muscle of the Body*) by degrees form'd into a shape quite different from the natural; the right Auricle and Ventricle notwithstanding the strength of the Fibres of *the latter* and their indisposedness to stretch easily, so prodigiously distended, that no outward force whatever without breaking it could effect the like; such hard shift did nature make to continue the vital stream and avoid the fatal stop, *each moment* threatned by the Polypus, that with *double* force she was oblig'd to maintain a Pulse, which (because it could not break or expel the unnatural load,) did By *little and little stretch* the sides of the ventricle, for the more easy passage of the blood, and by terrible palpitations for *a long time* protract a miserable life, till the monstrous body growing too big, the weakened Fibres could stretch no more, nor yet regularly contract themselves any longer; so that the Heart at last just ready to sink under the burden, is forced to collect its little remaining strength into one brisk effort, and assisted by *all the spirits* of the Body caus'd the poor wretch to expire in an universal Convulsion.

After this Instance, it might be improper to add the more uncertain arguments drawn from *the Diseases and Symptoms* that are either the *Effects* or *Causes* of *Polypi*, but that the bare mention of such distempers does not only (as being generally chronical) farther prove their duration, but also illustrate their *natures* and suggest a cure (if possible) or at least a method of *prevention*. The *Diseases* wherein almost always they may be expected, are the Apoplexy, Phrensy, falling Sickness, Convulsions, Asthma (or difficult breathing,) Consumption, ill cur'd and lingering Feavers, Plague, venereal Diseases, Pleurifies, Peripneumonies, Green-Sickness, varices of the Veins, and inveterate Headaches, &c. Instances in all which and many more *Bonetus* has industriously collected out of *Platerus Wepfer, Severinus, Tulpius, Blasius, Ballonius, Keringius,*

krtingius, Borelius, Malpighius, and others, too many to be nicely quoted, since we have among us in the University, eye-witnesses enough in most of the cases recited.

The part most usually affected is the right Ventricle of the heart, and the *genus venosum*, where the blood returning from the habit of body, flow in motion, impoverished and dispirited more easily admits such a concretion : yet the left Ventricle and the *genus arteriosum* frequently breed the like, such was that *Tulpius* mentions, branching out into the *Aorta* and *Vena Pulmonaris*, in a person who died of a grievous Apoplexy, and such *Wepfer* makes one great cause of Apoplexies. The sinus's of the brain also often harbour them, as we have found in one that had an obstinate Headach, and at last died mad ; and not long since in another, who once had some fits of a Frenzy, and at length died epileptical, in both which cases the *sinus longitudinalis* was full of a *Polypus*, which emitted very tough branches into all the little lateral vessels, and *Blasius* gives the like account in a mad-Man's brain, who at last died convulsit. 'Twere easy to amass together many Observations of this nature, but upon the stress of these already brought tis reasonable to assert, that a *Polypus* is so far from being a product at the period of a disease, that it seems rather a stated settled cause as well as an immediate occasion of the fatal symptoms which attend the most incurable distempers; thus if in the heart it grow so large as to force a *Diastole* beyond the due tension of the *Fibres*, it produces a mortal *Syncope* ; if smaller and not exceeding the confines of the Ventricle, a strong and irregular pulse succeeds, and there must be a palpitation of the Heart to maintain life ; if it send branches into the larger pulmonary vessels, the motion of the blood is retarded, and the breast and lungs labour under their load in an *Asthma* : or if it reaches the capillaries, a *Peripneumony*, an *Ulcer*, and at last a *Consumption* is at hand ; if the concretion begins in the small vessels of the *Pleura*, then a *Pleurisy* follows, if it grows and fixes in the larger vessels of the arms, legs, or the like, painful *varices* appear, and probably *Rheumatisms* owe much of their pain to some such concretions begun in the capillary vessels of the habit of the Body. Again, when these bodies are in the *Sinus* of the Brain, if small, the vessels will only be a little distended, and so a pain in the head may suffice, but if larger, the obstruction increases, the blood and spirits are cast into an hurry, the brain is inflam'd, the senses presently are disorder'd in the apprehension of their objects and so a *Frenzy* seizes the man ; if yet they chance to be bigger and fill the *Sinus* more, the blood pent up, moves more furiously, and so destroys Sense and all voluntary functions,

Elions, then the tumult extends beyond the limits of the *brain* through the whole systeme of the *Spirits*, and whereas in a *Frenzy*, *Sense*, though mistaken did direct their paths, now they run *quadata porta* ungovern'd and impetuous through the *Nerves* and *Muscles* causing the *involuntary motions and Convulsions of an Epilepsy*, which continue till the *Spirits* are spent, the *blood* quiet, and the *blood-vessels* by the *very agony* enlarg'd equal to their burden; and indeed in *Epilepsies*, dissections seldom miss of a *Polypus*, neither can we deny this *convulsive power of a concretion in the brain*, since the great *Lower's* experiment tells us that a *Dog* died in terrible *Convulsions* by injected *Milk* coagulated only in his *heart*; but lastly, if the *Sinus* prove almost totally obstructed, the *blood* instantly overflows the *brain*, and without much previous notice (except perhaps of giddiness, loss of sight, or the like) an *Apoplexy* insues; which disease will also more dangerously happen, when some particles of a *Polypus* in the left *ventricle of the heart* broken off by the violent stream of *blood*, shall be impacted into the *carotid Arteries* at their insertion into the *brain*, whence all intercourse of spirits will irrecoverably be stopt. Now tho in some of these cases a *Polypus* does only by fits disquiet the man it possesses, yet it is in being when it does not produce such sensible effects, for exercise, passions, diet and other external causes will so affect the quantity and motion of the *blood*, that the obstruction may be more insupportable than when the *stream* was calm, and tis as easie to imagine the disorders thus caus'd in an *animal body*, as that a large *swift River* dam'd up from quietly pursuing its own channel, must needs impetuously overflow all the country about; and thus we have consider'd those *Symptoms* of which a *Polypus* may rationally be thought (at least occasionally) the next and immediate cause. As for others before mention'd, namely, the *Plague*, *venereal Diseases*, *lingring Fevers*, and the like, they are not the effects of a *Polypus* but causes that dispose the *blood* of some Persons to such *pinuitous Concretions*.

But to discover their cause more nicely we may observe with *We fer*, that persons thus afflicted are never well, *breath* hardly, have frequent palpitations of the *heart*, *unequal pulses*, are dull to all action, *stupid*, *luxurious and slothful*, of a *livid leaden or fallow Complexion* or a *saturated red in hands and face*, because there is either very little *blood* in the *Capillaries* of their *skin*, or at best a *slow circulation*; their *blood* has usually a *thickness* and peculiar *lensor* in it, or abundance of *serum*, the later for want of *volatile salt* to digest the *chyle* into a *laudable red*, and the former Happens, either because the *heart*, destitute of spirits for its pulse, cannot duly agitate the mass or (as experiments on *blood* emitted seem to prove) by reason of the mixture of a *preternatural Acid*, whence may infer this conjunct
cause

cause of a *Polypus*, that the Fibres of the *blood* not being sufficiently sustain'd and kept asunder by a due motion of the inter-cepted fluid parts, may either barely upon the account by *Nest* cling together, or else may be by degrees connected to an *austere astringent acid* (always to be found in cachectical Bodies) for the same reason as (an *analogous liquor*) milk is curdled, only with this difference that in this, the coagulation is brittle, because the Fibres are weak and short, whereas it may be very tough in *blood*, because its Fibres are strong and of a greater length.

Upon the whole we may conclude that whatever maintains the fluidity, motion, spirit, and texture of the *blood* promises a cure (though not of a *confirm'd Polypus*) yet of the *first Rudiments* of it. All these indications are answer'd by medicines of volatile, brisk active parts, which destroy acids, exalt and ferment the *blood*, and do not only hinder, but also dissolve the first beginnings of coagulation and probably tis by affecting the *blood* and not immediately the *nerves*, that they do such feats in diseases before mention'd. Lastly, the effects of bleeding in some cases can never enough be admir'd, thus *Riverius* tells us of a Girl 12 years old, being bled plentifully for a *Pleurisy*, was cur'd of her *falling Sickness*, a disease never without the suspicion of a *Polypus*.

But Sir, the importunity and surprize of the Press must put a stop to these Speculations, and gives me leave only to beg yours and the readers favor for all the defaults of

Your humble Servant

W. Gould.

The explication of the Figure of the *Polypus* according as it appear'd, when fresh expanded on a Board

- A That part of the *Polypus* which was firmly rooted in the right Ventricle of the Heart.
- B. The Branch terminated in the right Auricle.
- C. D. D. D. The part tending toward the Lungs.
- E. E. The Branch running out of the ventricle into the pulmonary Artery.
- e.e.e.e, &c. The several lesser Ramifications distributed according to the several divisions of the pulmonary Artery.
- F. F. F. The branch belonging to the descending Vena Cava.
- G. G. The branches began in the Axillary veins.
- H. H. H. H, &c. The two branches that ran up the Internal Jugulars even to their entrance into the Skull.
- k. k. Two little black specks of concreted blood contain'd within the Coat of the *Polypus*.

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Fig. 3.

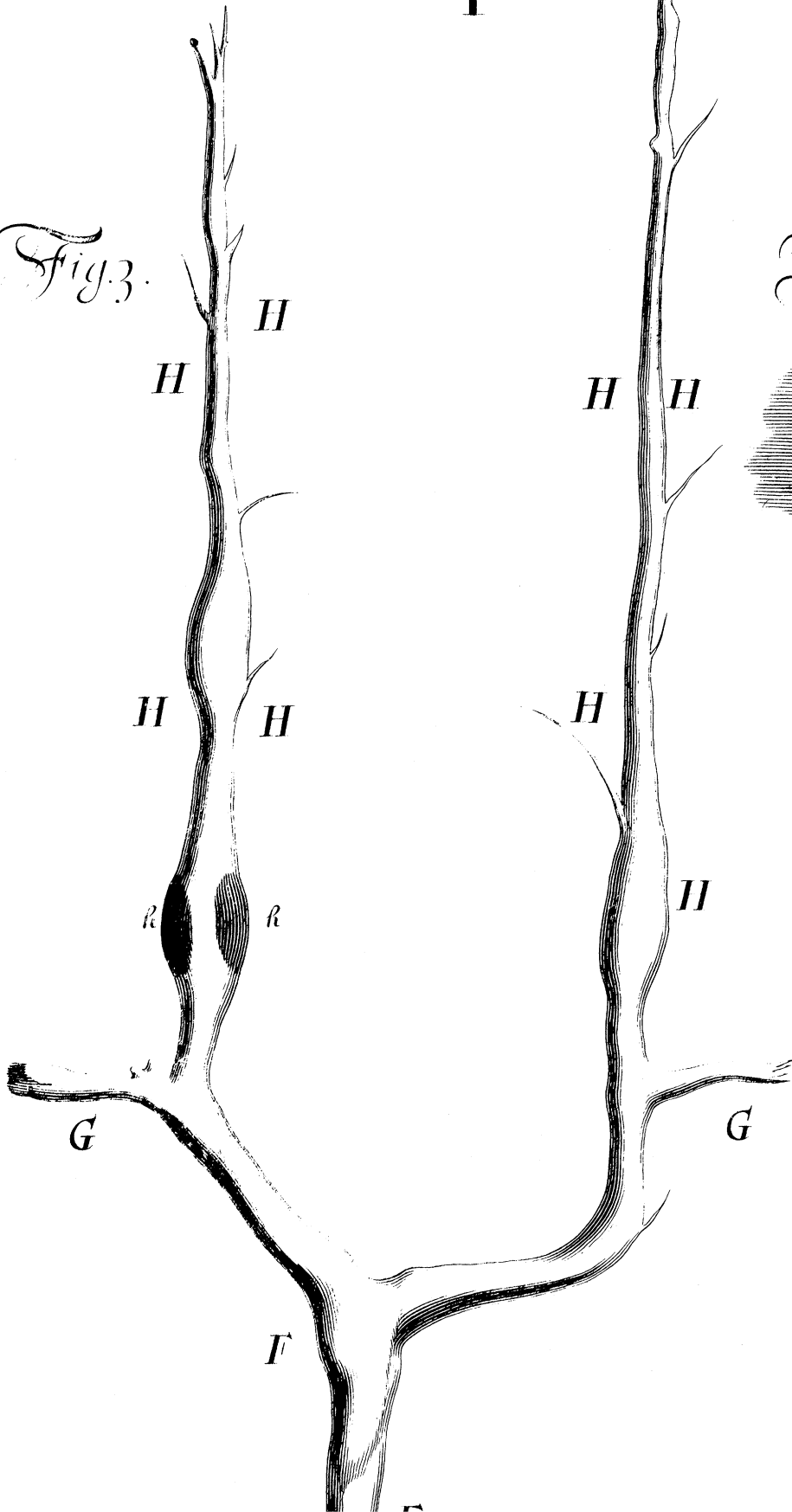


Fig. 2.



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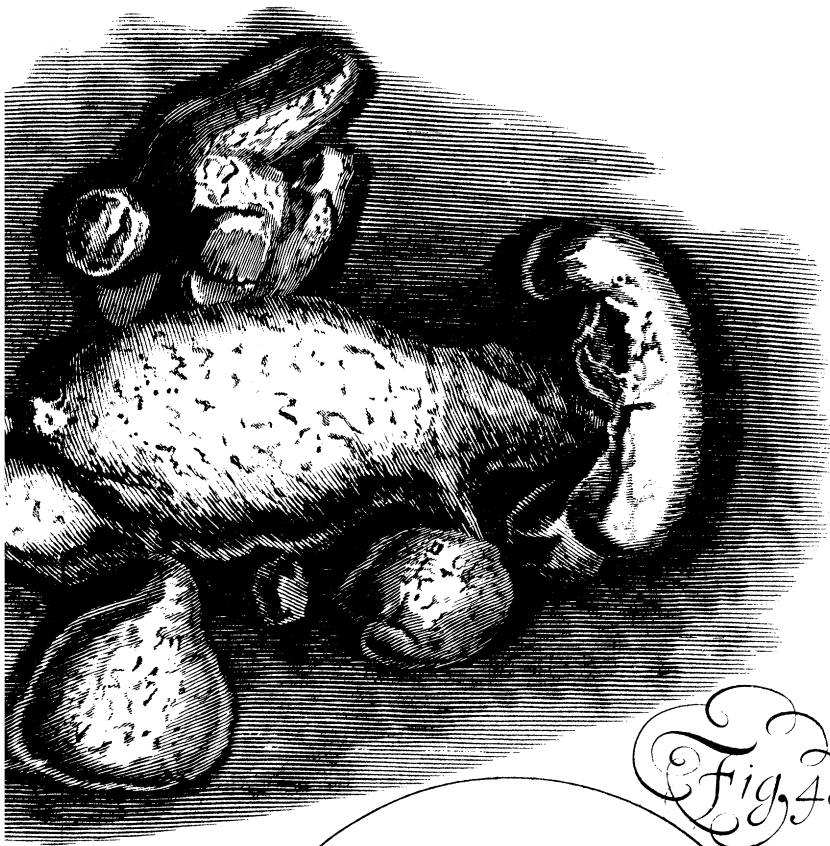
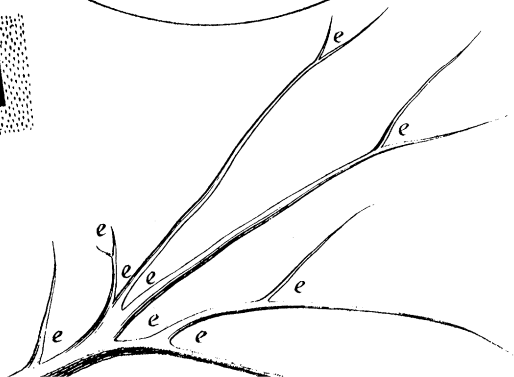
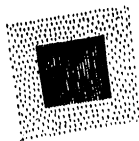


Fig. 4.



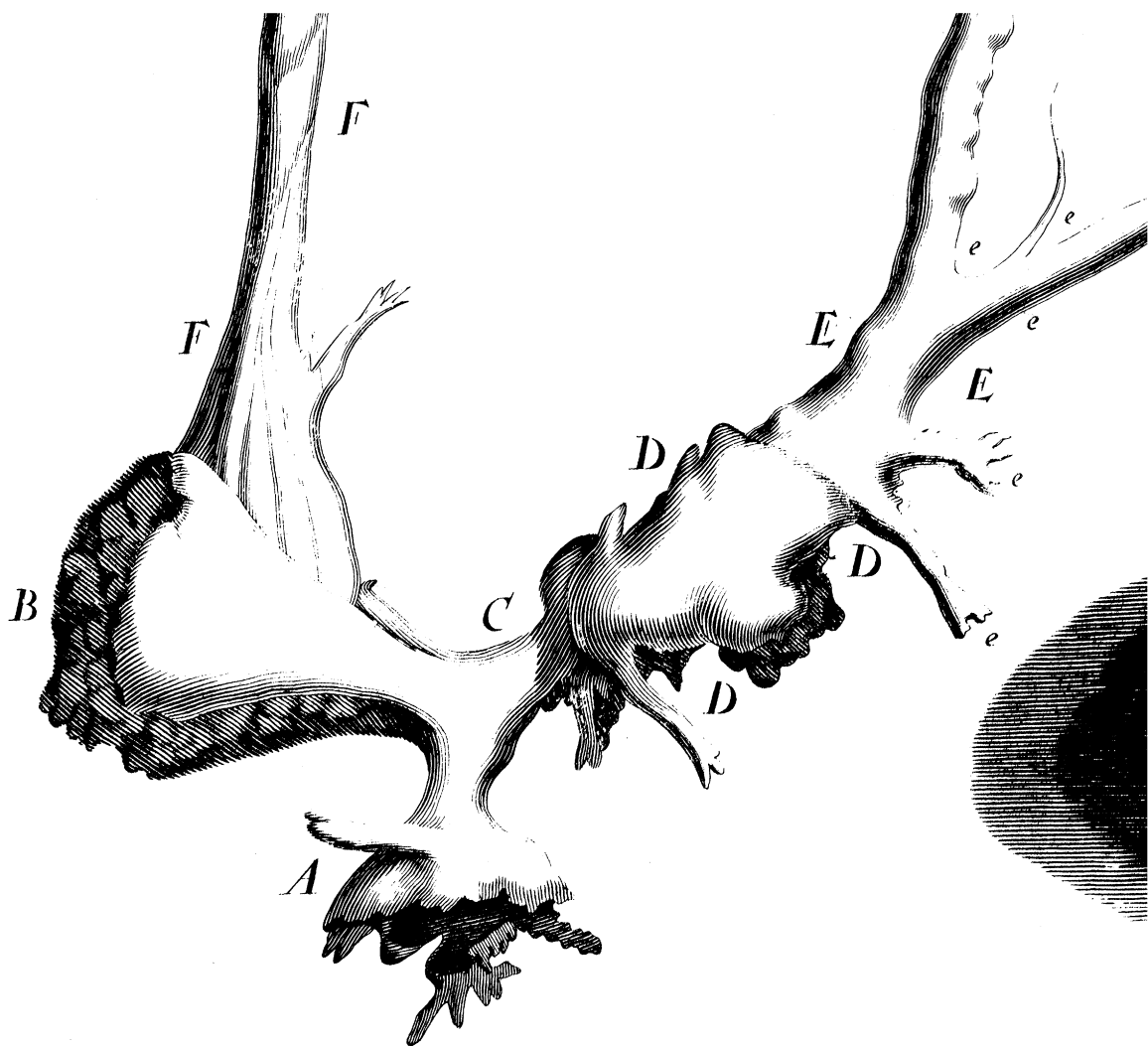
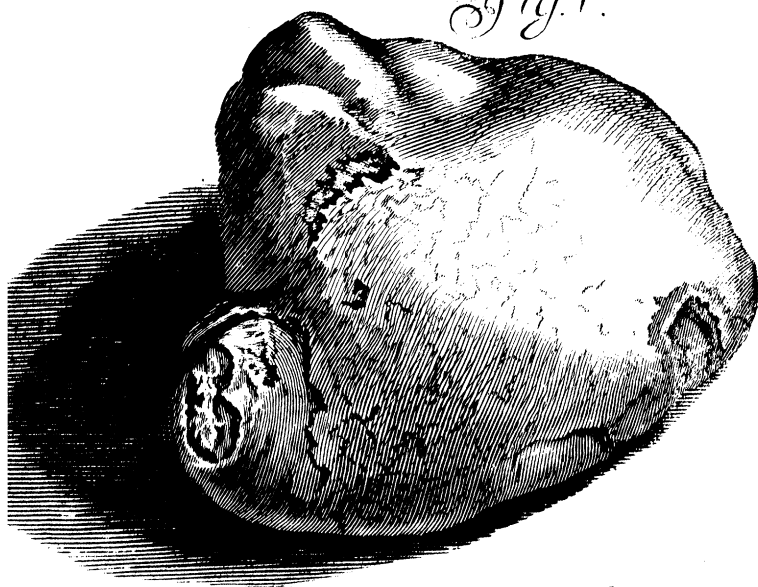




Fig. 1.



A. Burghers sculp.

Fig. 3.

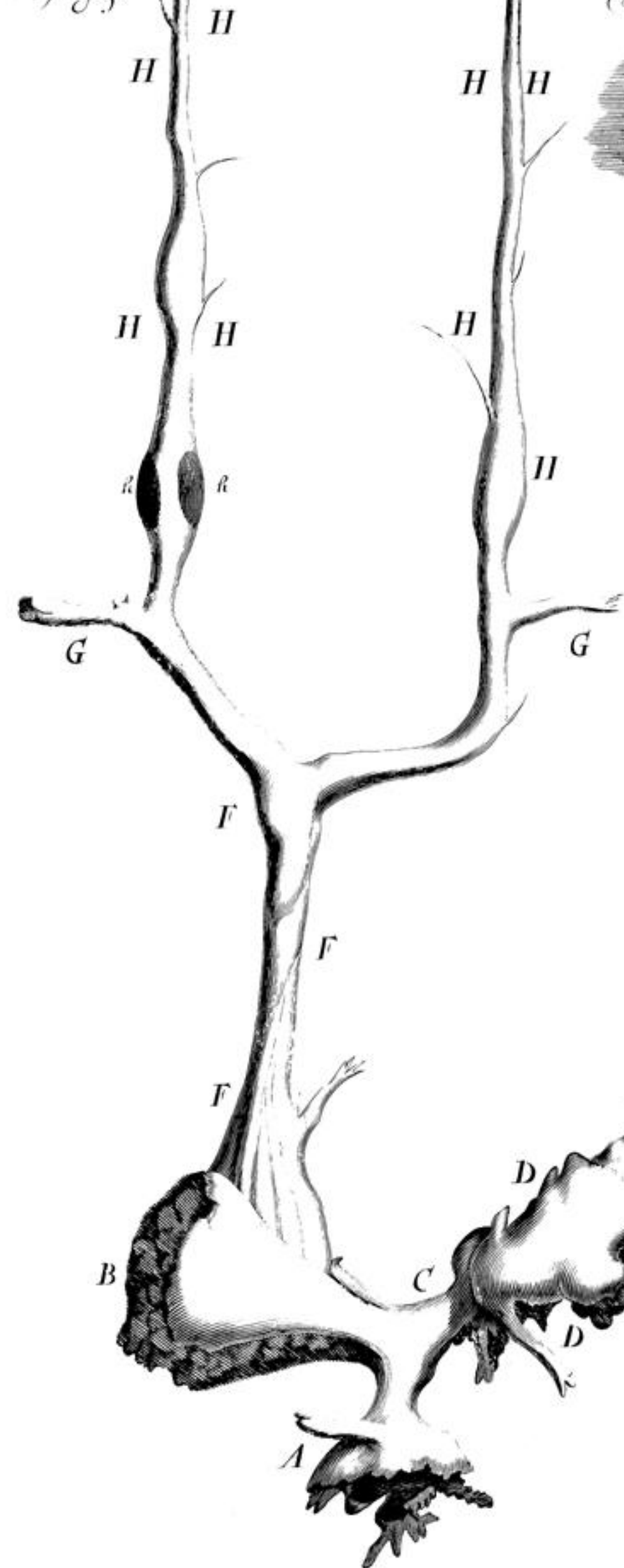


Fig. 2.

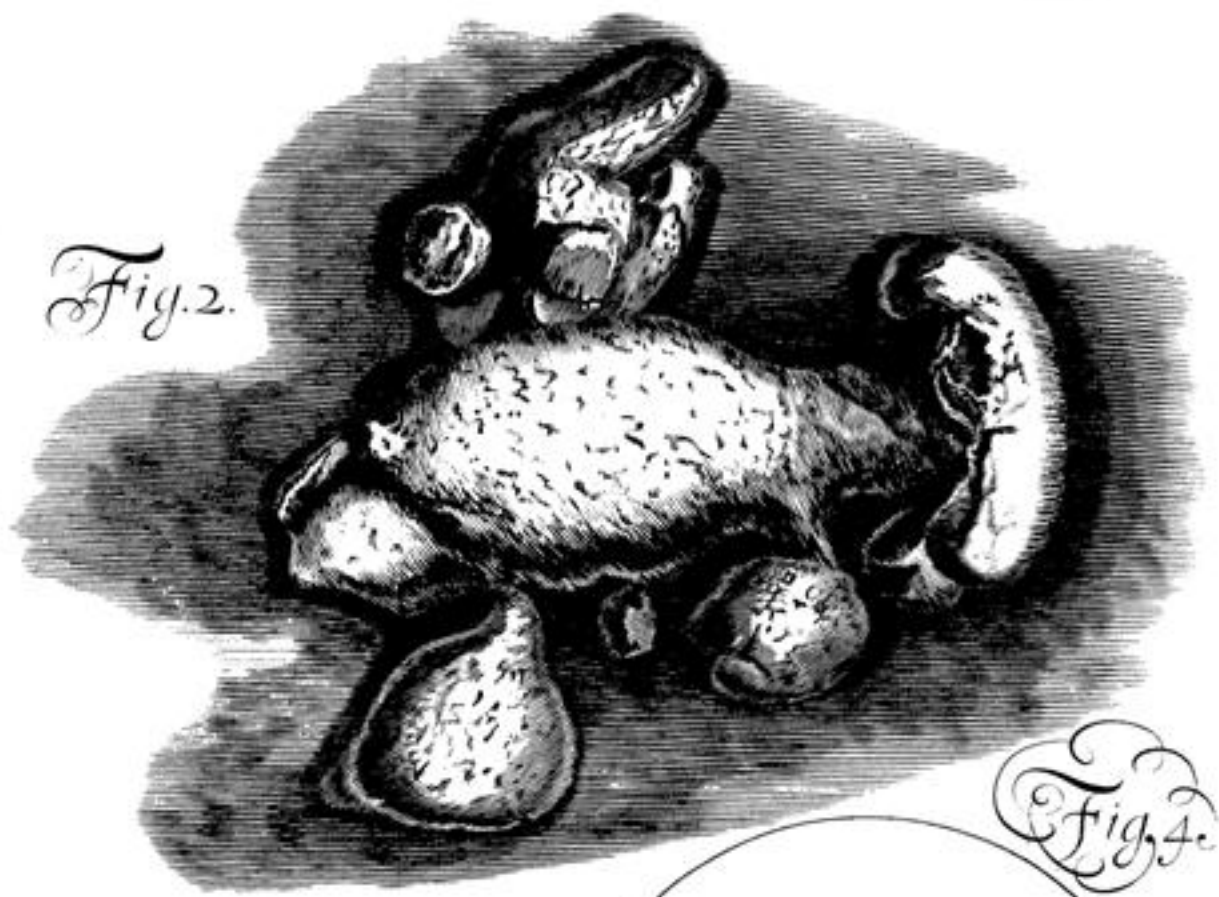
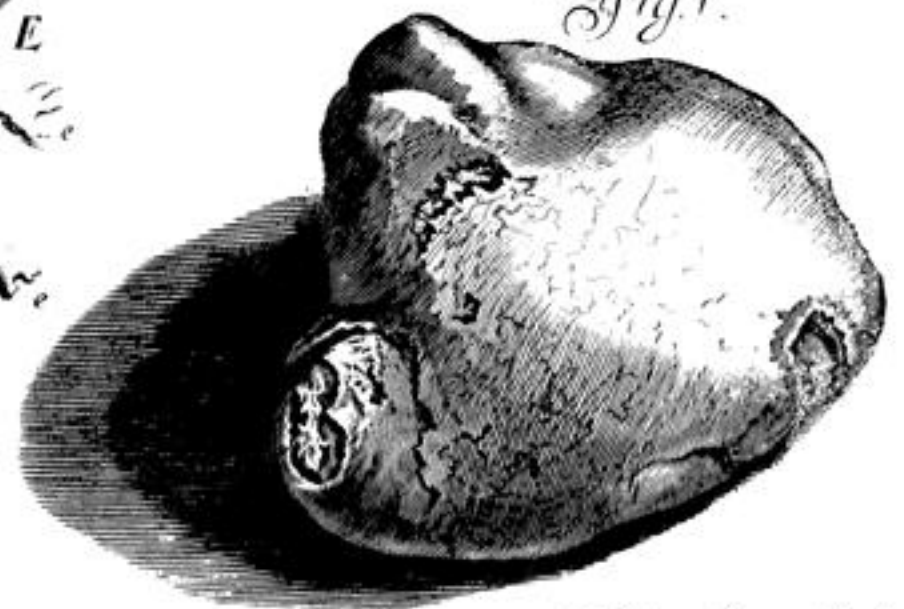


Fig. 4.



Fig. 1.



A. Burghers sculp.